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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/361,980	07/28/1999	ICHIRO ITO	PM.262732	6217

27572 7590 02/26/2003

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EXAMINER

UMEZ ERONINI, LYNETTE T

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 02/26/2003

19

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/361,980	ITO ET AL.	
	Examiner	Art Unit	
	Lynette T. Umez-Eronini	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on ____.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-4, 7-11, 26, 27 and 33-42 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) ☒ Claim(s) 1-4, 7-11, 26, 27 and 33 is/are allowed.

6) ☒ Claim(s) 34-38, 41 and 42 is/are rejected.

7) ☒ Claim(s) 39 and 40 is/are objected to.

8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>16 & 18</u> .	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 37 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 37, lines 1 and 2, "wherein the ionization tendency of the metallic film is larger than that of the metallic film" is indefinite because it is unclear how the ionization tendency of a substance is larger than itself.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 34, 35, 36, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Ruggiero (US 4,878,770).

As pertaining to claims 34 and 36, Ruggiero teaches a method of etching a metallic film, comprising steps of:

forming a TiW (same as applicant's metallic film) barrier layer **24** on a thin film resistor **22** (column 3, lines 24, 25, and 60);

forming an Al (same as applicant's conductive film) layer **28** on the TiW (metallic film) barrier layer **24** (Figure **3** and column 3, lines 43-44 and 58-61; and Figures **3** and **5**), which further reads on the conductive film being different substance from the metallic film;

forming a first opening in the conductive (aluminum) film to expose the metallic (TiW barrier) film from the first opening (Figure **3** and **6A**; column 3, lines 42-49 and 59-66), reads on,

forming an opening in the conductive film to expose a sidewall of the conductive film and a portion of the underlying metal film through the opening; and

forming a masking film over the conductive film, the masking film having a pattern which exposes a part of the portion of the metallic film in the opening with the sidewall of the conductive film covered; and

etching the metallic (TiW barrier) using the masking film as an etching mask, the etching including wet etching (Figures **4A** and **7**; column 3, lines 66-68).

Since Ruggiero's forms and etches a different conductive and metallic film like that of the claimed invention, then using Ruggiero's method of etching these materials would inherently result in an ionization tendency of the conductive film being larger than that of the metallic film, **as in claim 35 and 37**.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruggiero (US '770) as applied to claim 34 above, and further in view of KAWASAKI STEEL CORP [KAWI] (English Abstract of JP 04157723 A).

Ruggiero differs in failing to teach the etching includes dry etching prior to the wet etching, **in claims 41 and 42.**

KAWI teaches dry etching an aluminum film before wet etching (Abstract).

It is the examiner's position that it would have been obvious to one having ordinary skill in the art at the time of the claimed invention to modify Ruggiero by using KAWI's method of dry etching before wet etching for the purpose of selectively removing the Al film and removing sidewall residues from the Al film.

Allowable Subject Matter

7. Claims 39 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 1-4, 7-11, 26, 27, and 33 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to teach the step of forming a mask on the conductive film after forming the first opening, the mask having a second opening having an opening area smaller than that of the first opening and open in the first opening to expose the metallic film therefrom.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Art Unit: 1765

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynette T. Umez-Eronini whose telephone number is 703-306-9074. The examiner is normally unavailable reached on the First Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on 703-308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

ltue

February 24, 2003


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